the average levels described above. After that, the original transmitted signal is recovered by decoding the combined signal by a signal processor **19**.

FIG. **7** shows, against the normalized frequency (fDT), characteristics of the energy per bit to the noise spectral density (Eb/No) needed for achieving the average bit error rate (BER) of 10^{-3}. It is assumed here that there are four multipaths, and they are directly RAKE combined in the conventional system, and that two pairs of paths, each including a path with a large amplitude and a path with a small amplitude, are RAKE combined in the system in accordance with the present invention.

As can be seen from this graph, applying the present invention can achieve the improvement of about 0–0.5 dB in the energy per bit to the noise spectral density without the space diversity, and of about 0.3–0.5 dB with the space diversity.

The present invention has been described in detail with respect to preferred embodiments, and it will now be apparent from the foregoing to those skilled in the art that changes and modifications may be made without departing from the invention in its broader aspects, and it is the intention, therefore, in the appended claims to cover all such changes and modifications as fall within the true spirit of the invention.

What is claimed is:

1. A RAKE receiver comprising:

a plurality of despreaders, each of which corresponds to a path among multipaths of a channel, and despreads a received signal of the path;

a plurality of pre-detection combiners, each of which combines at least two signals delivered from said despreaders;

a plurality of detectors for detecting outputs of said pre-detection combiners or outputs of said despreaders;

a post-detection combiner for combining signals output from said detectors; and

a path searcher for identifying said multipaths and for assigning said despreaders to the paths.

2. The RAKE receiver as claimed in claim **1**, further comprising a switch for connecting outputs of said despreaders to desired ones of said pre-detection combiners, and for connecting the outputs of said despreaders to inputs of said detectors, wherein said path searcher controls a connection state of said switch.

3. The RAKE receiver as claimed in claim **2**, wherein said path searcher dynamically changes said connection state of said switch in response to an identification result of said multipaths.

4. The RAKE receiver as claimed in claim **1**, wherein at least one of said pre-detection combiners combines a path with a signal level larger than a predetermined value with another path with a signal level smaller than the predetermined value.

5. The RAKE receiver as claimed in claim **1**, wherein said pre-detection combiners combine a plurality of paths whose average signal levels are smaller than a particular threshold value, and said post-detection combiner combines paths whose average signal levels are greater than the threshold level.

6. The RAKE receiver as claimed in claim **1**, wherein said pre-detection combiners combine the paths whose signal levels are between a first threshold level and a second threshold level lower than the first threshold level, and said post-detection combiner combines the paths whose signal levels are above the first threshold level, and wherein the paths whose signal levels are below the second threshold level are cancelled without being combined.

7. The RAKE receiver as claimed in claim **1**, wherein said path searcher determines combinations of said paths such that a sum of average levels of each input to be RAKE combined becomes substantially equal.

8. The RAKE receiver as claimed in claim **1**, wherein said post-detection combiner combines N paths selected in descending order of magnitude of an average signal level beginning from a greatest one in the average signal level, where N is a predetermined natural number, and said pre-detection combiners combine remaining paths whose average signal levels are smaller than those of the N paths.

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